

# LOAD RUNNER

THE GALAXY'S FIRST COMPUTER COMIC

THEY SAY THAT WHEN YOU'RE ABOUT TO **DIE**, YOUR ENTIRE LIFE FLASHES BEFORE YOU.



**F**OR **LOAD RUNNER**, SWEEPED OFF A CLIFF BY THE FORCE OF AN **AVALANCHE**, ALL THAT FLASHES BEFORE HIS EYES IS HIS STRUGGLE AGAINST A DEADLY COMPUTER-CONTROLLED **GAME-WORLD**. ALL MEMORY OF HIS PREVIOUS LIFE HAS BEEN **DELETED**.

WIN A COMPUTER  
WAR GAME

TALES FROM THE  
MEMORY BANK

TERRAHAWKS  
ARE GO



IN HIS STOMACH, HE FEELS THE  
SICKENING **EMPTYNESS** OF  
**FALLING**...

...ABRUPTLY BROUGHT TO AN  
EQUALLY SICKENING **HALT!**

**OOOFF!!**

UUNH...  
I NEVER THOUGHT  
I'D BE SO **GLAD**...  
TO LAND SO  
**HARD!**

HEY, YOU  
ALL RIGHT?

YEAH,  
THANKS PETRA...  
GLAD TO SEE YOU'RE  
OKAY, WHERE'S  
...?

I...I'M  
**HERE**, LOAD  
RUNNER, BUT  
O-ONLY JUST...

WE  
WERE **REALLY**  
LUCKY.

HUH,  
SEEN THIS  
**DROP**? WE'RE  
NOT THAT  
LUCKY!

LUCK IS AN **INVALID VARIABLE**  
IN THIS COMPUTER WORLD.

LOADING  
COMPLETE, SUBJECTS  
LOCATED.

GAME  
PROGRAM NOW  
RUNNING.

I DON'T  
KNOW, BUT THEY  
SEEM FRIENDLY.  
PERHAPS WE CAN USE  
THESE **CARE**!  
**BALLOONS**...

HOW  
DID I LET YOU  
TALK ME INTO  
THIS?

THERE  
WAS NO OTHER  
WAY OFF THAT LEDGE.  
WOULD YOU RATHER  
I'D LEFT YOU  
BEHIND?

WELL...  
NO...! HOW ARE  
YOU MANAGING OUR  
FURRY FRIEND? HEY,  
WHAT'S HAPPEN-  
ING TO YOU?

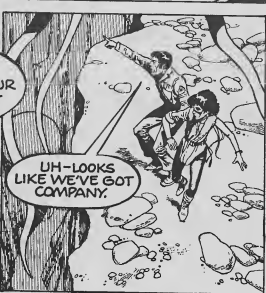
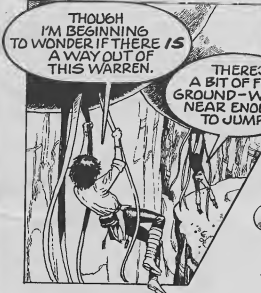
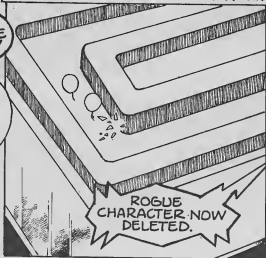
HE'S  
**FADING**  
**AWAY!**



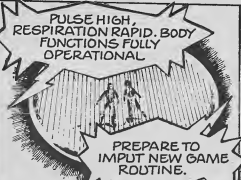
...STRIKING THE NEARBY ROCK WALL!



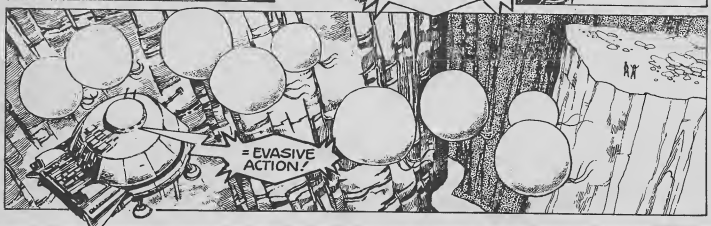
THE GAME CLAIMS THE FIRST VICTIM.



THE GAME OVER, THE COMPUTER ASSESSES THE SUBJECT'S PERFORMANCE...



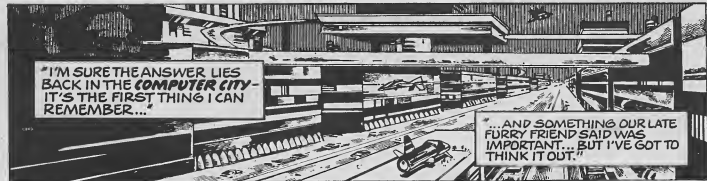
...BUT UNDER-ESTIMATES THEIR QUICK RESPONSES.



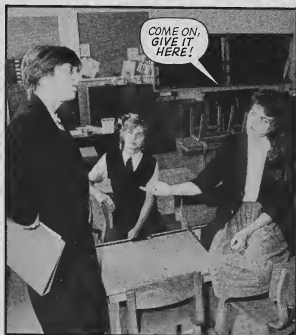
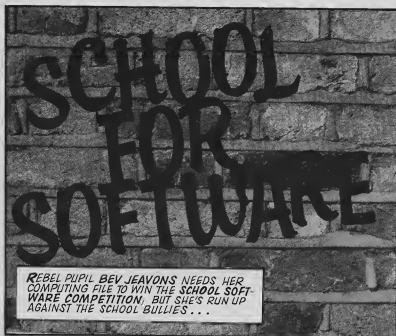
# LOAD RUNNER



SCRIPT  
STEVE CRADDOCK  
ARTWORK  
PETER DENNIS  
LETTERS  
NICK HOLLINGWORTH



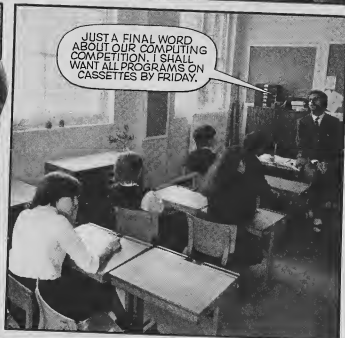
NEXT PRINTOUT = HIGH NOON!



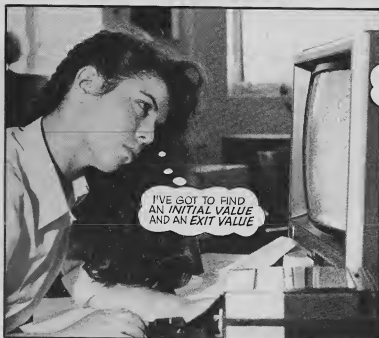
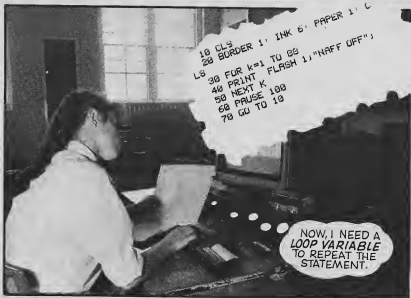
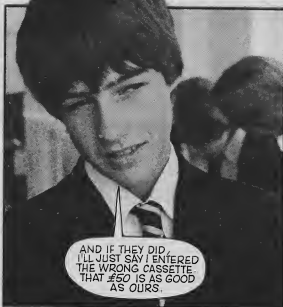
SCRIPT : FRANK HOPKINSON

PHOTOS : HENRY ARDEN

LETTERS : JACK POTTER







# SCHOOL FOR SOFTWARE

IN THE STAFFROOM...



WELL, I'VE NEVER SEEN HER DOING **EXTRA WORK** FOR ANY OTHER SUBJECT. SHE WAS HANDLING THAT COMPUTER AS THOUGH SHE **MADE** IT.



To be continued—



TI 99/4A  
Home Computer  
only £99.50

# TEXAS INSTRUMENTS

TI 99/4A Solid State Software

Some of our Crazy Prices:

EXTENDED BASIC	£52.25
MINI MEMORY	£52.25
BLASTO	£10.50
CHISHOLM TRAIL	£16.80
TUNNELS OF DOOM	£20.80
SOCCER	£12.50

Post & Packing Free - VAT included  
Send S.A.E. for full price list  
Please make cheques payable to

## PARCO ELECTRICS

4 Dorset Place, New Street, Honiton,  
Devon, EX14 8GS.  
Tel: Honiton (0404) 44425

## TERMINAL SOFTWARE

PINBALL WIZARD has bumpers, rollovers, a jackpot, slingshots and 3 flippers that you can even use to trap and hold the ball! You can even nudge the table, but not too often or it tilts! PINBALL WIZARD IS PURE ENJOYMENT.

UNEXPANDED  
VIC 20

**New**  
PINBALL  
WIZARD

REALISTIC  
GRAVITY!

Rec. Price £7.95

"An excellent game" said Computer and Video Games (Sep 83).

A novel, exciting and compulsively tactical arcade-style game.

The FIRST 41 games cassette to have SIMULTANEOUS TWO-PLAYER ACTION—realistic sound effects too.

Commodore 41  
**SUPER SKRAMBLE!**

Commodore 41  
**SUPER GRIDDER**

Commodore 41  
**SUPER DOG FIGHT**

Rec. Prices £9.95

SPACE ISLAND and VAMPIRE VILLAGE are unique and exciting replayable real-time graphic adventures—guaranteed to keep you on your toes. CITY is what we call a real-time computerised better-than-a-board game... find out why. All superb value at Rec. Price £6.95

Sinclair  
Spectrum 48k

**SPACE ISLAND**  
**VAMPIRE VILLAGE**  
**CITY**

SELECTED TITLES NOW AVAILABLE IN:

**Dixons Software Express**  
**GREENCHIP at Debenhams**  
**LASKYS**



**Coming  
soon**

**Only  
£1.95**

# The Second Sinclair User Annual

The most up-to-date guide to the world of Sinclair computers

Full reviews of all the top software, complete Basic programming course latest round-up of peripherals, masses of the best program listings and much more

Make sure you do not miss your copy.  
Place an order today.

To Sinclair User, ECC Publications, 198-200 Balls Pond Road.

Name ..... I enclose a cheque for £ .....

Address ..... Signed

.....  
.....

# DECODERS

## Load Runner T-shirts for lucky Decoders

ONCE AGAIN three exclusive *Load Runner* T-shirts are waiting to be claimed by the Decoders whose membership numbers are listed in the coded printout below. To discover whether you are one of the lucky ones, decode the message using your Cipher Book. The message also contains an easy question. If your number is included, claim your prize by writing your name, address and membership number on a postcard, together with the answer to the question, and post it to me at my installation base, to arrive not later than November 11. Don't forget to state whether you require a small, medium or large size T-shirt. The prize-winners will have their photographs displayed on this page in future printouts.



DECODERS

### Keyword No 3

- JFR ZRPJ ZRPJ QRVRF
- JFR JFR SHPRR RMT HS
- JFR SHPRR JFR IJUP
- MF WHMGH QSJPY
- OJRQ O AKKRAP?



Join  
the  
Club

THE *LOAD RUNNER* DECODERS is a rapidly-growing fan club for readers of the first computer comic in the galaxy. A new member will receive a personalised security pass with his or her photograph mounted on it, together with a membership number. This Security Pass will give the bearer a reduced admission charge to exhibitions and computer fairs announced from time to time in the Decoders page of *Load Runner*.

Each member will also receive the Decoders Cipher Book which provides the key to the coded messages which appear in each printout. Exciting prizes are awarded to successful Decoders whose membership numbers appear in those messages.

The cost of membership is £3. If, however, you cut out the word Decoders from the top of this page and from one other printout of *Load Runner*, you can join the club at the special reduced rate of £1. Simply fill in the application form below and send it together with your membership fee and TWO passport-size photographs to: The Controller, *Load Runner* Decoders, ECC Publications, 196-200 Balls Pond Road, London N1 4AQ. Please make cheques or postal orders payable to ECC Publications Ltd.

List below the story-programs and fact-routines you like best in *Load Runner*.

- 1 .....
- 2 .....
- 3 .....

What do you dislike most in *Load Runner*?

Do you have a computer? YES/NO

Name ..... Age .....

Address .....

## ZX MICROFAIR Decoder Discounts

CALLING ALL DECODERS! At the ZX Microfair, held at the Alexandra Palace, Wood Green, London N22, on Saturday December 4 and Sunday December 5, *Load Runner* Decoders will be entitled to a 50% discount on the normal admission charges of 50p for children and £1 for those over 14, on presentation of a Decoder Security Pass, AND THAT'S NOT ALL ... My operators have negotiated additional discounts on software bought from the following software houses which will be appearing at the show:

ARTIC COMPUTING — a 30% discount on all software.

CRYSTAL COMPUTING — a 30% discount on all software.

MIKRO-GEN — a 50p discount IN ADDITION to all other discounts offered at the fair.

The discounts will be effective only for the duration of the fair, so make sure that you don't miss this great opportunity to buy the latest Sinclair software at knock-down prices. REMEMBER—all discounts can be offered only on presentation of your Decoder Security Pass.

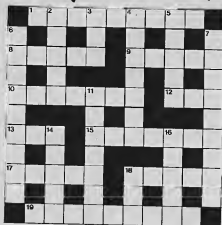
See you there!

The Controller



MIKRO-GEN

# Wordplotter 11



## Across

1. Colourful computers but not rainbows... (9)
2. .... and what you can use to get rainbows (5)

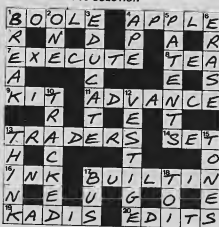
9. Things a micro PRINTs (5)
10. Results of calculations achieved with the ENTER key? (7)
12. Help in both directions (3)
13. Our counting base but not the computer's (3)
15. Old vehicle or hot computer perhaps (7)
17. Leaves out most I mix up (5)
18. — or worse, when done by computer (5)
19. Mercury was one once, and with Prestel, is again (9)

## Down

1. A computer's display instruction (5)
3. One-toothed wheel near Sinclair and Acorn homes (3)
4. Bring out again something concerning children (7)
5. Encounters hunts (5)
6. A bit of computer action by the surgeon? (9)
7. How a computer is used by the Post Office (2,1,6)
11. Opposes the current (7)
14. A noisy one annoys an oyster! (5)
16. Join two programs in one (5)
18. Vehicle to carry a minicomputer before the army (3)

# COMPUTATIONS

## WORDPLOTTER 10 SOLUTION



## ANSWERS to the puzzles in last printout.

The five computer programs explained in the wordsearch are: **BUSINESS, EDUCATION, UTILITY, ADVENTURE, and SIMULATION.**

The five computer terms concealed in the jugged vertical columns are: **MICRO, DATA, KEY, CABLE and DRIVE.**

# INPUT/OUTPUT

## Quicksilver Winners

THE FOLLOWING are the winners of the Quicksilver Competition in Printout No. 6. Congratulations to each winner, who will receive the cassette of their choice:

Leo Austin, Somerton, Somerset; Robert Austin, Chesham, Bucks; L. H. Baker, Richmond, North Yorks; Timothy Bartlett, London NW5; Kevin Bell, Northwich, Cheshire; Mark Bell, Middlehead, Berkshire; Chris Boland, Wetherby, West Yorks; A. Brightley, Wisbech, Cambs; Paul Bushell, Rickmansworth, Herts; Andy Cadie, Beaumarchais, Kent; Keon Loong Chan, Thame, Oxon; Oliver Collins, London NW5; Joseph Comerla, London NW6; T. M. Costigan, Chatterham, Glos; Andrew Cuthbert, Brough, North Humberside; Les De-Stuender, Leek, Staffs; Carl Duckett, Bridgend, Mid-Glamorgan; Nick Farrow, Hailsham, Sussex; D. Geoghegan, Mitchem, Surrey; Paul Hargreaves, Brentford, Middlesex; James Howat, Bleiwegwille, Richard Huss, Lismore, Co. Antrim; Bill J. Reddick, Worcs; David Johnson, Walsley, Cheshire; David Jolly, Blackburn, Lancs; Trevor Leay, Farnborough, Hampshire; Miles Leaver, Holford, Hampshire; Andrew Lees, Walsall, W. Midlands; Graeme Lennox, London W9; Ian Lynam, Huddersfield, Yorkshire; Douglas McIntyre, Falkirk, Scotland; Matthew McLean, Odiham, Hampshire; Philip Manning, Liverpool 13; Simon Mayrick, London N15; T. Hugh Murphy, Gerrards Cross, Bucks; John Myers, London NW1; Robert Oulton, Rainworth, Notts; F. Patel, Kenyon, Middlesex; Sheikh Rahman, London SW19; Joel Reid, London NW3; Ian Roby, Yelliterra, Swanscombe, Kent; Sheffield, Justin Scott, County Down, N. Ireland; Andrew Shaw, Southwam, Halifax; Dave Singer, Liverpool 13; Paul Spidman, Chalfonts, Bucks; Kevin Wiles, West Bridgford, Nottingham; John Wong, London E18.

## Poster poser

I HAVE BEEN buying *Load Runner* since the first printout and I have, each printout, carefully taken out the posters and pinned them on my pinboard in my bedroom. In the last two printouts, however, the posters have not been in the centre pages. Is this a mistake or is there a reason? If it is a mistake, can you consult your operators and ask them to put the posters in the centre pages again so that I can continue my collection?

Ian Doggett, aged 11, Ipswich.

- It is not a mistake, Ian, and the reasons are complicated. Briefly, it is necessary sometimes to change the position of pages which are printed in colour to accommodate extra pages of colour advertising. Whenever possible, however, my operators will place the poster in the centre of the comic, as they have done in this printout.

## Easy to understand

I HAVE READ other computer magazines but it is difficult to understand them; with *Load Runner* everything I wanted to know about micros is at my fingertips, while I am able also to read some great stories. I do not have a computer but I am planning to have one and if you print this letter the money will go towards saving for it. My favourite stories are *The Invasion of the Arcadians*, *School for Software*, and *ROM and RAM*.

Asif Khan, 13, Hounslow, Middlesex.

- It is not necessary to own a computer to appreciate the fine story-programs and fact-routines in *Load Runner*. *School for Software* is certainly one of the most popular programs in *Load Runner*. Make sure you don't miss the final episode in Printout No. 12, on sale, November 24.

I will pay £3 for each letter or joke printed.

Write to: The Controller,  
Load Runner,  
196-200 Balls Pond Road,  
London N1 4AQ

## Would-be Decoder

I ENJOY your comic very much, especially Trumball's World. I have only one complaint. Two months ago, I sent for my special *Load Runner* Security Pass. I still have not received it and therefore cannot take part in the competitions for Pass Holders. Please could you tell me what is wrong and when will I get my pass?

Louis Wong, London E18.

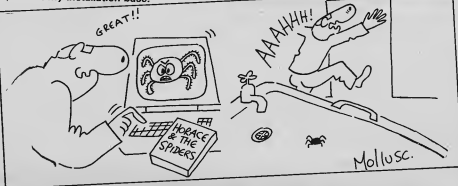
- My operators have accessed the Decoder Databases and have found that you omitted to enclose two passport-size photographs of yourself with your membership application. As soon as your photographs are received, my operators will despatch your personalised security pass and code book. Other would-be Decoders, take note.

## Program printouts

I OWN a 48K Spectrum and the programs printed in your comic for this computer are not very clear. I often make mistakes typing in programs because I just cannot see colours and small things like that. Please could you do something about it?

Adam Pearson, aged 11, Glasgow.

- The quality of computer printouts is often far from perfect and my operators do their best to ensure that the programs are easy to follow. Despite their efforts, however, the occasional printout is difficult to read. If readers have difficulty with programs printed in *Load Runner*, please write to me at my installation base.



# ALL THE BEST

Here's a sure-fire way of making certain this Christmas is packed full of fun for you and your friends. We've searched for brilliant new program sources throughout the U.K. and North America to find an exciting collection of new games — and business programs — many of which cannot be bought by mail order from any other source! These are our latest exclusive offerings. Make sure you place your order now to receive them in time for Christmas.



## PITMAN SEVEN ●

Your mission is to rescue two teams of seven desperate men, trapped underground on level five. You must bring each man to the surface, surviving the dangers you meet en route.

ZX Spectrum 48K.  
Cassette price: £6.95.

Ref. No: 2-52



## SNOOKER ●

Visions Snooker brings all the excitement and all the tension of big time tournaments to your TV set.

With an advanced program written by a 19 year old undergraduate at Queens College Cambridge, it makes Pot Black look like a load of old . . .

Visions Snooker for the 16K ZX Spectrum. It's an exciting test of your skills on the cue.

Cassette price: £8.95.

Ref. No: 2-53

**GREAT VALUE! TREMENDOUS SELECTION! PLUS A FREE OFFER EVERY TIME!**

Fill in the order form right away — we're guaranteeing fast delivery, quality and satisfaction [after all, we want you to come back for more!]

**The Software Workshop, Yew Tree, Selborne,  
Hants GU34 3JP**

**FREE BLANK C15 C  
WITH EVERY TWO CA**

Remember there's no limit to the cassettes you receive if you don't get together with members and share!

**GUARANTEE**

Order with complete confidence — not entirely satisfied with your purchase return it for a full refund and we will provide you with a replacement.

# OR CHRISTMAS!

And here's a further selection of the latest games, the best-value software for your ZX-81 or Spectrum.

## ZX81 Software

### 1-01 Stock Market

Buy and sell your way to millions! 16K RAM

£3.95

### 1-02 Football League

First division fun for the soccer enthusiast. 16K RAM

£3.95

### 1-03 Test Match

Match your wits alongside the superstars. 16K RAM

£3.95

### 1-12 Avenger

Avoid missiles and bombs to become the ruler. 16K RAM

£3.95

### 1-13 Protector

Defend your own ship from oncoming attackers. 16K RAM

£4.95

### 1-31 Comp-U-Share

Investment management program for unit trusts, shares and loan stocks. Complete documentation included. 16K RAM

£4.95

## Spectrum Software

### 2-13 Sentinel

Guard your mother ship against alien attacks. 48K RAM

£4.95

### 2-14 Meteor Storm

Spectrum version of the ever-popular arcade game. 16K or 48K RAM

£4.95

### 2-15 Star Trek

Popular space program brought to life by excellent graphics. 48K RAM

£4.95

### 2-21 Frogger

Manoeuvre the frog across the road avoiding heavy traffic. 48K RAM

£5.95

### 2-22 Crazy Balloons

Guide the balloons round the maze without bursting. 48K RAM

£5.95

### 2-23 Arcadia

The expert's version of the popular 'Invaders' game. 16K or 48K RAM

£5.95

### 2-24 Golf

The finest of golf handicap games. 48K RAM

£5.95

### 2-25 Test Match

More exciting than the real thing! 48K RAM

£5.95

### 2-26 Derby Day

This favourite has to be a winner. 48K RAM

£5.95

### 2-41 Comp-U-Share

See 1-31 under ZX81. 48K RAM

£9.95

### SHEER PANIC ●

Mining for Magnetic Quartz is a hazardous business. You have to ensure that there is plenty of oxygen to breathe, fight off the local monsters with only a shovel and counter interference with your consciousness.

ZX Spectrum 16K or 48K. Cassette price: £5.95.

Ref. No: 2-51

## COMPUTER CASSETTE SETTES YOU ORDER!

to the number of free  
order justifies them — so  
friends or user group  
the freebies?

## NTEE

confidence. If you are  
with the quality of  
it to us within 7  
de a replacement.

## To: The Software Workshop, Yew Tree, Selborne, Hants GU34 3JP

I wish to order the following programs. I understand that:

- \* I will receive a FREE blank cassette with every 2 programs ordered
- \* I can return products within seven days if not entirely satisfied and receive a replacement.

Ref No	Qty	Title	Price

Postage, packing and handling: add 45p for the first cassette, and 25p for each additional cassette. Non-UK orders add extra 50 %

I enclose a cheque/postal order for \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Total



(Allow 28 days MAXIMUM FOR DELIVERY)

# Andy Royd - the DOMINATORS' Rogue star!

THE DOMINATORS' SECRET WEAPON ANDY ROYD HAS USED HIS SPORTING BRAIN AND BIO-MECHANICAL LIMBS TO LEAD HIS TEAM FROM STRENGTH TO STRENGTH.



...SOMEONE PROGRAMS A ROBOXER TO PLAY FOOTBALL!

ROBO 10 - REQUEST  
TO COME OFF-LINE  
FILED -  
NO SUBSTITUTE  
AVAILABLE

WITH ONLY  
10 ROBOS AND  
NO ANDY, I'VE  
NO CHANCE.



MARSHALL  
AND ROLAND  
BILES CERTAINLY  
PULLED ONE  
OUT OF THE  
BAG THIS  
TIME!

SCRIPT-  
CHRIS WINCH  
ART-  
JOHN STOKES  
LETTERS-  
S. CRADDOCK

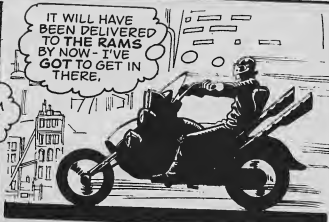




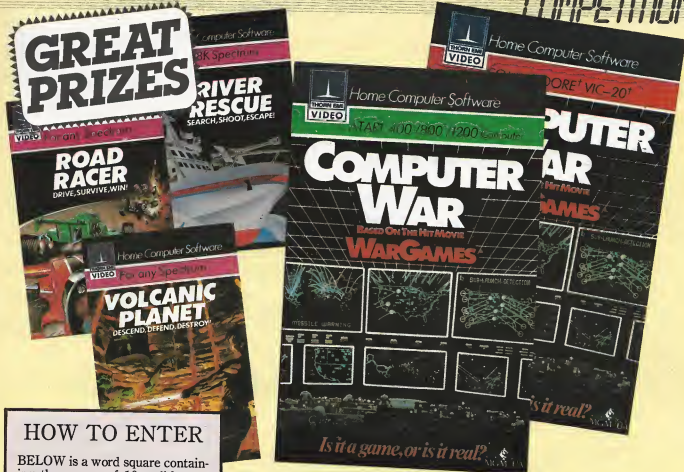
... SO I'M MOVING YOU TO THE BACK THREE FOR THE CUP TIE WITH THE RAMS - AND WE'LL SEE HOW WE CAN ADAPT OUR SOFTWARE.







## GREAT PRIZES



### HOW TO ENTER

BELOW is a word square containing the names of 10 well-known computers. The names can be read upwards, downwards, horizontally, diagonally, forwards or backwards. When you have found them, list them in the space provided and send your entry to Computer War Competition, *Load Runner*, 196-200 Balls Pond Road, London N1 4AQ to arrive not later than Friday November 25.

The prize winners will be decided on the basis of the first 6 correct entries opened. My decision will be final, and employees of ECC Publications and Thorn EMI are ineligible.

To help you in your search, three of the hidden computers are those named on this page! Happy hunting.

The Controller

## Win a computer war game

In this printout's thrilling competition we are offering as prizes the latest exciting software available from Thorn EMI. There are six prizes to be won and prize-winners can choose from the following: *Computer War* for the Atari 400/800/1200; *Computer War* for the Commodore Vic-20; and a package of three Spectrum cassettes, *Road Racer* (16K), *Volcanic Planet* (16K) and *River Rescue* (48K).

*Computer War* is based on the hit movie *WarGames*, and you are in charge of the Defense Department computer which has signalled the launch of a Soviet nuclear attack against the United States. The attack is, in fact, only a simulation program, but the computer is unable to detect the difference, and it is your daunting task to crack the code, track the enemy missiles and destroy them in a fast-action duel. *Computer War* comes in cartridge form and will cost approximately £30 for the Atari version and £20 for the Vic-20.

The three Spectrum cassettes are offered together as one prize. *Road Racer* is a grueling motor race in which you have constantly to out-maneuvre the other drivers. In *Volcanic Planet* you must descend to the depths of an alien underground city and plant your plasma bomb, avoiding the ferocious Zerans. *River Rescue* for the 48K Spectrum, features a powerful jungle patrol boat which you must navigate along a hazardous river to rescue the stranded explorers. All three games cost approximately £7 each.

A	S	A	P	P	L	E	I	E
Q	E	P	Y	F	G	N	R	H
U	L	J	E	X	W	O	A	X
A	E	V	Y	C	D	G	T	O
R	C	I	K	O	T	A	A	P
I	T	C	M	Q	K	R	J	L
U	R	M	C	B	B	D	U	K
S	O	T	T	O	W	Y	J	M
C	N	K	L	Y	N	X	Y	Z

The 10 computers hidden in the word square are:

.....

.....

.....

.....

.....

.....

The prize of my choice is.....

Name.....

Address .....

Age .....

## Computer cable TV

**M**ICRO USERS could soon be able to receive computer games in their homes via cable. The Government is poised to give some companies cable franchises. If Thorn-EMI wins one it plans to transmit the games through telesoftware to some makes of home computer fitted with read-only memory packs, which will match the incoming software with the make of computer.

W H Smith is hoping to provide a games channel which will run on any cable network. Each games enthusiast will be known to Smith's central computer and will be able to obtain the games only through a special key which can download them.



## Busted hardware

**H**OW WOULD you feel if you found a policeman climbing in through your bedroom window to seize your computer? In homes across the United States, FBI agents have seized computer hardware and telephone equipment from youngsters. The hackers, it is claimed, are responsible for damage worth hundreds of thousands of pounds caused by linking their systems to big computers such as those at the Massachusetts Institute of Technology and the McClellan Air Force base in California.

The FBI raids were, as the mother of 14-year-old Eric Stadjas said, "a real shock." Eric's home was ransacked by six agents who "looked under beds, took off mattresses and pulled out drawers. They took all Eric's computer equipment. They claimed he had obtained entry to Defense department computers."

In California, Wayne Carreira, 17, was surprised by an FBI agent shouting "FBI—and that computer is mine," as he clambered in through the window.



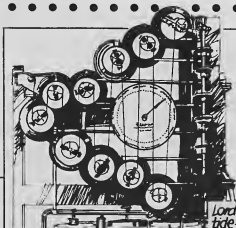
## The Computer Story

A HISTORY OF COMPUTERS  
PART ELEVEN

**T**HE FIRST SUCCESSFUL DIGITAL COMPUTERS WERE REALLY JUST NUMBER-CRUNCHERS, SOLVING REALLY TOUGH MATHEMATICAL PROBLEMS INVOLVING THE INTEGRATION OF PATTERNS OF INFORMATION WAS FIRST DONE BY ANALOGUE COMPUTERS.

THEY ARE A BIT OF A CURIOSITY THESE DAYS, BUT ANALOGUE MACHINES WERE SIGNIFICANT IN THE EARLY DAYS OF COMPUTING, AND ALSO IMPORTANT BECAUSE WE USE A WIDE-RANGE OF

## THE TURNING POINT



ANALOGUE INPUT AND OUTPUT DEVICES ON OUR MODERN MICROS—E.G. JOYSTICKS, TRACK-BALL CONTROLLERS, "MOUSE" AND GRAPH PLOTTERS.

WHILE TRYING TO DESIGN COMPUTERS WHICH ARE EASIER TO USE, SCIENTISTS HAVE BECOME AWARE THAT THE HUMAN BRAIN SEEMS TO WORK MORE ON ANALOGUE THAN DIGITAL PRINCIPLES, AND RENEWED INTEREST IS BEING SHOWN IN ANALOGUE SYSTEMS OF INFORMATION PROCESSING.

THE FIRST USEFUL ANALOGUE COMPUTER WAS BUILT IN THE 1870s BY THE BRITISH PHYSICIST LORD KELVIN. IT WAS A MECHANICAL SYSTEM THAT PREDICTED TIDES AROUND THE SHORES OF GREAT BRITAIN. LATER, KELVIN PUBLISHED A SCIENTIFIC PAPER EXPLAINING THE POSSIBILITIES OF BUILDING A MORE SOPHISTICATED, GENERAL-PURPOSE MACHINE. PERHAPS PEOPLE WERE PUT-OFF AT THE THOUGHT OF HOW LARGE AND COMPLEX SUCH A MACHINE WOULD BE, AND NOTHING WAS DONE FOR FIFTY YEARS.

Lord Kelvin and his tide-predictor, 1873.



## Micros pay lip service

**D**ID YOU KNOW that when you talk to other people they will study your lips as well as listen to you when they try to understand what you are saying? Not very much, however, is known about lip-reading and its role in communication. Scientists at Lancaster University have programmed a computer to draw cartoon-type faces from video films of people speaking so that the facial movements of someone talking can be studied.



• **Buzzwords** are the jargon of the computer world and can be very confusing. Below, *Load Runner* continues its glossary of computing terms. Get buzzing.

• **Joystick.** An instrument which is controlled manually. It enables the cursor to be moved swiftly around the screen, which is useful when playing space invader type games. It resembles the joystick used to control an aircraft.

• **Jump.** An instruction which has the same purpose as that of the GOTO instruction. When the Jump command is executed the computer will go to the specified address and continue from there.

• **K.** K stands for kilo which means 1,000 but in computing terms K is the recognised symbol for 1,024 bytes. Kilobits are represented by the letters Kb whereas Kilobytes are represented by the abbreviation KB.

• **Key.** A word or symbol given to index information on a computer so that it can be retrieved easily.

• **Key-in.** The operation of typing into the computer either a program or data using a keyboard input device.

• **Keyboard.** A device which is used to enter programs or data into a computer. Most keyboards are QWERTY keyboards and take their name from the first six keys on the top row of letters. The keys are arranged in the same way as those on a typewriter keyboard and feature both numbers and letters.

• **LCD.** An abbreviation for liquid crystal display. Digital watches and calculators often have LCD when they are battery-operated. The battery sends an electric current through the crystals, thus turning them black. Some computer visual display unit screens use LCD.

• **Language.** Computer languages are used to communicate with the computer. The computer has its own language, called machine code, which looks like a list of numbers. All other languages must be translated into this machine code before execution of a program can take place. Examples of computer languages are Basic, Fort and Lisp.

• **Library.** A collection of bits of programs or data.

• **Light pen.** An instrument which looks like a pen and has a light-sensitive tip. When the light pen is connected to the computer it can be used to draw pictures straight on to the screen.

• **Line.** A connection between either two computers or a computer and a device such as a computer or disc drive.

• **Line-feed.** A term which originates from the process of the paper in the printer moving up as the lines are printed. On a VDU the cursor moves down to the next line, not up.

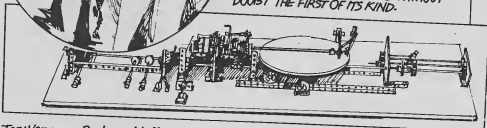
THE MAN TO CONVERT IT INTO REALITY WAS A BRILLIANT MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) PROFESSOR NAMED VANNEVAR BUSH. SOME PEOPLE CONSIDER HIM TO BE THE TRUE FATHER OF THE COMPUTER.

THE BUSH DIFFERENTIAL ANALYZER OF 1930 WAS DESIGNED TO SOLVE EQUATIONS ASSOCIATED WITH ELECTRICAL POWER, DISTRIBUTION AND FAILURES, BUT WAS ALSO GENERAL ENOUGH TO SOLVE A WIDE VARIETY OF PROBLEMS.

TO SPEED THE MACHINE UP, AND



IMPROVE ITS FLEXIBILITY, BUSH TOOK THE CRUCIAL STEP IN 1935 OF REPLACING SOME OF THE MECHANICAL COMPONENTS WITH ELECTRONIC VALVES - IN WHICH MATHEMATICAL VALUES WERE STORED AS VOLTAGES. ALTHOUGH THE VALVES WERE LARGE, UNRELIABLE, CONSUMED AN ENORMOUS AMOUNT OF POWER AND GAVE OFF A LOT OF HEAT, THE DIFFERENTIAL ANALYZER NO.2 NEVERTHELESS WORKED AND WORKED WELL. IT WAS BOTH ELECTRONIC AND GENERAL PURPOSE, AND WAS WITHOUT DOUBT THE FIRST OF ITS KIND.



Top: Vannevar Bush, and left, his differential Analyzer. The plotting boards on the right were used for input and output.

Above: This differential analyzer was made from "Meccano" parts by Professor Hartree of Manchester University after he visited MIT and saw Bush's machine at work. It cost \$20!

Written and drawn by Chris Smithers

# SUPER MICRO MATION

FROM the makers of Thunderbirds and Stingray comes a new science-fiction puppet serial on ITV, *Terrahawks*.

*Terrahawks* is set in the year 2020, when alien androids from the planet Guk are attacking Earth from their base on Mars. The defence of Earth is in the hands of an elite fighting force led by Dr Tiger Ninestein—a video games fanatic—called the Terrahawks. The Terrahawks are aided in their task by the Zeroids, a troop of computer robots under the command of the indomitable Sgt Major Zero.

Gerry Anderson is the creator of the series, as well as many other classic puppet epics, including *Joe 90* and *Fireball XL5*, made in the mid-1960s when most Decoders

## Puppets for the eighties

were just a spark of electricity in the motherboard.

With *Terrahawks*, Gerry and co-producer Christopher Burr have taken their puppets into the computer age. "The opening credits are done with computers for a start," says Gerry. "There is also a lot more hardware based around computers."

The series introduces a new process called Supermacromation, and the puppets are now operated by a combination of mechanical and electronic techniques.

One of the innovations is a Rolls Royce car, Hudson, which can change its colour. Fully automatic, the car doesn't need a driver and the on-board computer also acts as one of the Terrahawks managers.

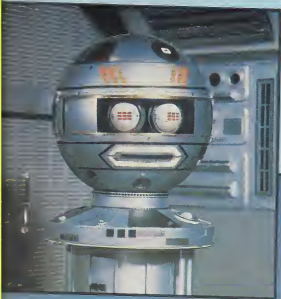
In association with Philips Video, there will be a new *Terrahawks* video game out soon. Don't think, however, that it's the one that Dr Ninestein keeps on playing. It's not. This one is limited to Philips cartridge players, the G7000 and G7200.



Top left: Dr Tiger Ninestein  
Top middle: Sgt Major Zero  
Top right: Captain Kate Kestrel  
Bottom left: The computer car



ON SCREEN





**T**HE COMPUTER will select a four-colour sequence. Find the correct sequence as quickly as possible. Select four colours by entering the appropriate numbers. You will be told how many colours are in the correct place which you have selected in column A and how many colours in the wrong place in column B.

Mensa was written for the 16K Spectrum by Mr Stoppard of Roath, Cardiff. (isp) should be entered, wherever it appears, as a space in inverse mode.

```

15 RANDOMIZE
20 REM GRAPHICS
25 PAUSE 150
29 CLEAR
32 PLOT 92,4
33 DRAW -32,0
34 DRAW 0,144
35 DRAW 32,0
36 PLOT 92,132
37 DRAW -32,0
38 PRINT AT 4,0;"A"
39 PRINT AT 4,10;"B"
40 PLOT 92,4
50 DRAW 64,0
60 DRAW 0,144
70 DRAW -64,0
80 DRAW 0,-144
90 FOR N=1 TO 8
100 LET A=4+16*N
110 PLOT 92,A
120 DRAW 64,0
130 NEXT N
140 FOR M=1 TO 4
150 LET B=32+16*M
160 PLOT 8,B
170 DRAW 0,144
180 NEXT M
250 FOR H=1 TO 16
260 LET C=132+H
270 PLOT 92,C
280 DRAW 64,0
290 NEXT H
500 REM CODE
510 DIM C$(5)
520 FOR N=1 TO 4
530 LET C$(N)=INT (RND*6+1)
540 NEXT N
600 REM INPUT
605 DIM F$(5)

```

```

607 FOR T=0 TO 7
610 FOR N=1 TO 4
630 PRINT AT 20-2*K,10+2*N;"(A)
P)"
650 INPUT "CHOOSE A COLOUR "F(N)
652 IF F(N)>=7 THEN GO TO 650
653 IF F(N)<=0 THEN GO TO 650
654 IF F(N)<>INT F(N) THEN GO
TO 650
655 INK F(N)
660 PRINT AT 20-2*K,10+2*N;"(A)
P)"
665 INK 0
670 NEXT N
675 GO SUB 800
680 NEXT T
681 FOR H=1 TO 15
682 LET J=148-H
684 INVERSE 1
685 PLOT 93,J
686 DRAW 62,0
687 NEXT H
688 INVERSE 0
691 FOR N=1 TO 4
694 INK D(N)
696 PRINT AT 4,10+2*N;"(B)isp)"
697 INK 0
698 NEXT N
700 GO TO 1019
800 REM COMPARE
805 DIM A$(1,8)
810 LET A$(1,1)="ABCDEFHG"
830 LET KS=0
840 FOR N=1 TO 4
850 IF D(N)<>F(N) THEN GO TO 8
70
855 LET A$(1,N)="I"
857 LET A$(1,N+4)="I"

```

```

860 LET KS=KS+1
870 NEXT N
875 LET KT=0
880 FOR N=1 TO 4
885 FOR M=1 TO 4
886 IF A$(1,N+4)="I" THEN GO TO
0 895
887 IF F(N)<>D(N) THEN GO TO 8
92
888 IF A$(1,M)="I" THEN GO TO
892
889 LET KT=KT+1
890 LET A$(1,M)="I"
891 LET A$(1,N+4)="I"
892 NEXT M
895 NEXT N
935 PRINT AT 20-2*K,8;KS
940 PRINT AT 20-2*K,10;KT
975 IF KS=4 THEN GO TO 1000
980 RETURN
1000 INK 0
1002 FOR H=1 TO 15
1004 LET Q=148-H
1006 INVERSE 1
1008 PLOT 93,Q
1010 DRAW 62,0
1012 NEXT H
1014 INVERSE 0
1016 PRINT AT 4,12;"CORRECT"
1019 PRINT AT 6,23;"ANOTHER"
1020 PRINT AT 7,24;"GAME ?"
1022 PRINT AT 3,24;"Y/N"
1025 IF INKEY$="Y" OR INKEY$="u"
THEN GO TO 23
1030 IF INKEY$="N" OR INKEY$="n"
THEN STOP
1040 GO TO 1025

```





**D**ESTROY the enemy city by dropping bombs from your aircraft which moves across the screen, all the time descending steadily. It is best to destroy the tallest buildings first so as not to crash into them. The space bar drops the bomb and there are 50 extra points to be gained if you destroy the entire city.  
Bomb Alley runs on the Commodore 64.

```

1 DIMH$(20),HS(20)
2 PRINT"XXXXXXXXXX"
3 POKE646,5
4 LETA$="BOMB ALLEY"
5 FORI=1TOLEN(A$)
6 PRINTMID$(A$,I,1);
7 FORP=1TO50:NEXTP:NEXTI
8 PRINT
9 POKE646,7
10 PRINT"XXXXXXXXX PRESS SPACE BAR TO FIRE"
11 POKE646,3
12 PRINT"XXXXXXXXX PRESS ANY KEY TO PLAY"
13 GETA$:IFA$=""THEN14
14 GETA$:IFA$=""THEN14
15 SC=0:L=2
16 PRINT"J"
20 FORI=1TO38
30 LETA=1984+I
40 FORJ=1TOINT(RND(0)*8)+L
50 POKEA,160:POKEA+54272,3
60 A=A-40:NEXTJ:NEXTI
70 LETA=1104
80 POKEA,255:POKEA+1,119:POKEA+2,127
90 POKE54272+A,2:POKE54273+A,2:POKE54274,2
100 GETA$:IFA$="" THEN120
110 IFA$="" THEN250
120 POKEA,32
121 IFA=2023 THEN SC=SC+50:L=L+1:GOTO16
130 LETA=A+1
140 IFPEEK(A+2)=160 THEN 500
150 PRINT" BOMB ALLEY SCORE ";SC
160 IF R=1THEN180
170 GOTO80
180 POKEB,32

```

```

190 B=B+40
195 IFB>2023THENR=0:GOTO170
200 IFPEEK(B)=160 THEN SC=SC+1
210 POKEB,81
220 POKEB+54272,7
230 GOTO 170
250 IF R=1 THEN 120
260 LETR=1
270 LETB=A+1
280 GOTO 120
500 FORL=1TO255
510 POKE53280,L
520 NEXTL
530 PRINT"J"
540 FORI=1TO10
550 IFSC>HS(I)THEN 580
560 NEXT I
570 GOTO650
580 FORJ=9TO1STEP-1
590 HS(J)=HS(J-1)
600 H$(J)=H$(J-1)
610 NEXTJ
620 HS(I)=SC
630 INPUT" WHAT IS YOUR NAME ";H$(I)
640 PRINT"J"
650 POKE646,7
670 PRINT" BOMB ALLEY HALL OF FAME"
680 PRINT"XXXXXXXXXX"
690 POKE646,3
700 FORI=1TO8
710 PRINT"X";I;H$(I);TAB(23);HS(I)
720 NEXTI
730 FORP=1TO1500:NEXTP
740 GETA$:IFA$=""THEN 740
750 GOTO2

```

# IT'S THE PITS



Deep in the bowels of the earth, in a dark, dingy mineshaft, lie 14 desperate men. They've been trapped by vicious rock falls, they're threatened by deadly gas, and it's your mission to rescue them.

Pitman Seven takes you to the very depths of your imagination and maybe back again. With two separate attack waves and three levels of play, only the strongest survive. The weakest are doomed to a tomb.

Pitman Seven. It's tough, it's challenging. And it's yet another great game from Visions. The ultimate name in video games.

*Visions*

FANS PLEASE NOTE! ALSO AVAILABLE MAIL ORDER  
FROM VISIONS (SOFTWARE FACTORY) LTD  
1 FELGATE MEWS, STUDLAND STREET, LONDON W6



PITMAN SEVEN VS-01-48



SHEER PANIC VS-03-16



SNOOKER VS-03-1/4

SENT FROM THE FUTURE TO SAVE THE PAST, GALACTIC DETECTIVE D IS TO PLAY A DEADLY GAME THAT WILL DECIDE THE FATE OF MORE THAN JUST HIS THREE COMPANIONS.

## THE INVASION OF THE ARCADIAN

AS PUNISHMENT FOR YOUR MEDDLING MY MASTERS HAVE DECIDED THAT ON YOUR SHOULDERS ALONE WILL REST THE DEFEAT OF MANKIND. THEIR SHIPS ARE ABOUT TO ATTACK... TAKE UP YOUR POSITION.

SCRIPT:  
LES COOKMAN  
ART:  
JOHN STOKES  
LETTERS:  
STEVE POTTER

THAT HELMET ACTS AS AN INTERFACE BETWEEN YOU AND YOUR LASERS—A MERE TURN OF YOUR HEAD IS SUFFICIENT TO SIGHT YOUR GUNS—YOU CAN TRACK THE ALIEN SHIPS ON THE CONSOLE IN FRONT OF YOU.

D TAKES HIS SEAT AT THE CONTROLS...

YOU HAVE THREE SHIELDS ONLY! AND AFTER THAT, FED-TEC, EARTH IS DEFENCELESS. HAVE FUN!

HIS THREE COMPANIONS ARE UNABLE TO HELP...

OH WELL, I GUESS I MIGHT AS WELL SAY GOOD-BYE TO ANY MORE HISTORY HOMEWORK!

...WHILE ACROSS THE GLOBE DAZERS ARE DRAWN TO THE MIND WARP MACHINES THAT BEGAN THIS NIGHTMARE.

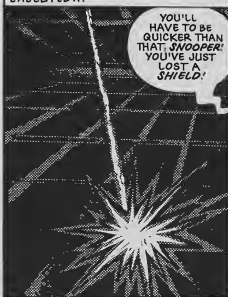
LET THE INVASION BEGIN!



ALMOST IMMEDIATELY A SHIP ZOOMS INTO D'S SIGHTS.



BUT BEFORE D'S COMMAND IS EXECUTED...



I MUST CONCENTRATE. SECTOR 2—FIRE!



BUT D IS ONE AGAINST MANY...



... FIGHTING THE COMBINED MIGHT OF THE ENEMY BATTALION AND ITS BRAIN-WASHED AGENTS ON EARTH.



ANOTHER SHIELD GONE! I'LL HAVE TO LINK INTO THE KIDS' BRAINWAVES— I'M TOO WEAK TO DO THIS ON MY OWN!



BEN, ASSIE, JO! IF EVER I NEEDED YOUR HELP IT'S NOW!

WITH RELIEF D FEELS THE POWER OF THEIR MINDS MERGING WITH HIS.



IF ONLY I CAN MAINTAIN THE LINK FOR LONG ENOUGH.

SECTOR 7'S FIRE! 9-FIRE!

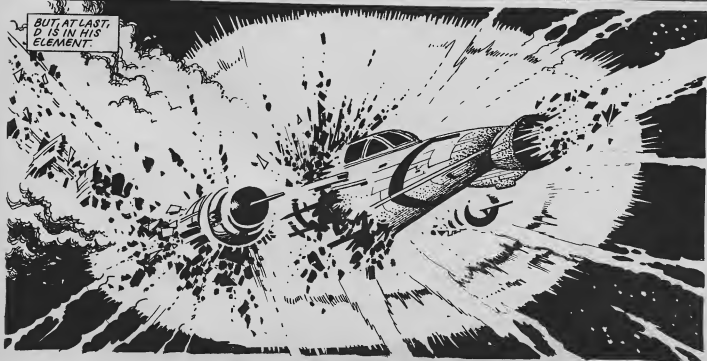


STRIKE ONE! AGAIN— SECTOR 54 FIRE!



DON'T GET TOO CONFIDENT, COPPER— REMEMBER YOU'VE ONLY GOT ONE SHIELD LEFT!

BUT, AT LAST, D IS IN HIS ELEMENT.





# THE ARCADIAN



DOES THAT ANSWER YOUR QUESTION?

BUT THE POWER OF THE ALIENS IS BROKEN— AND DAZERS EVERYWHERE DISCARD THE NOW USELESS HEADSETS THAT HAVE SO TOTALLY CONTROLLED THEIR LIVES.

C'MON GANG, THERE'S NOTHING LEFT FOR US HERE.



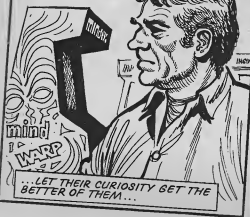
COME BACK, D!  
COME BACK!

... AND ACROSS THE ETHER OF SPACE, PERHAPS SOMEONE WISHES AGGIE, BEN AND JO A SAFE JOURNEY.



## EPILOGUE

SOME ARCADE OWNERS, PUZZLED BY THE SUDDEN BREAKDOWN OF THEIR MIND WARP MACHINES...



... LET THEIR CURIOSITY GET THE BETTER OF THEM...

... AND JUST HAVE TO TAKE A LOOK INSIDE...



... AND FOR THE REST OF THEIR LIVES THEY WILL WISH THEY HADN'T.



THAT BRIEF INCREDULOUS LOOK AT THE UNIMAGINABLE IS BURNED INTO THEIR BRAINS FOREVER.

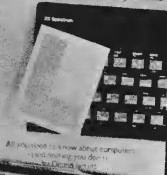
The End



**Second  
Edition Just  
published**

**THE GOOD  
COMPUTING  
BOOK FOR  
BEGINNERS**

PLUS a complete practical glossary of terms



All you need to know about computers  
in just one book you don't  
need to read!

If you only buy **ONE**  
computing book

**THIS IS  
THE  
CLASSIC!**

An entertaining, but **thorough** reference source  
with the most readable, comprehensive glossary  
you'll find anywhere. The Good Computing Book  
for Beginners is an essential A-Z of all the facts you  
need to know about computing — and none you  
don't

Whether you're brand new to computing, or an old  
hand keen to stay ahead, you'll score by keeping this  
classic, top-selling book within reach to use again and  
again

The author, Dennis Jarrett, is a successful journalist  
who was also founder editor of Which Computer  
magazine — so his first edition quickly became a  
standard work. Now this new, substantial  
enlarged and revised edition covers the latest  
trends, terms and technology with the relevant facts  
— and **ONLY** the relevant facts — in **plain English**

Here's another fact you'll find fascinating: it will only  
cost you £2.95

Use the coupon below to get your copy right away  
— or buy it soon from your bookshop. It's the one  
book you'll turn to again and again

Please send me \_\_\_\_\_ copy(ies) of The Good Computing Book for Beginners by Dennis Jarrett at £2.95 each plus 50p post and packing. I enclose a cheque for \_\_\_\_\_  
 \_\_\_\_\_ account Visa/Access/Diners/Amex number \_\_\_\_\_  
 Signature \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_  
 City \_\_\_\_\_ Postcode \_\_\_\_\_  
 (please print name)  
 PUBLICATIONS LTD  
 200 Balls Pond Road  
 London N1 7EN

## Lynx



### Specifications

Price  
Numbers sold  
How sold  
Processor  
Standard RAM  
Expansion RAM  
Basic + operating system  
Display  
Tape recorder  
Backing storage

### Software

Camsoft Ltd, 33a Bridge Street, Cambridge CB2 1UW.  
Bambi Software, Leverburgh, Isle of Harris.  
Gemsoft, Unit D, The Maltings, Station Road, Sawbridgeworth, Herts.  
Level 9 Computing, 229 Hughenden Road, High Wycombe, Bucks.

### Comments

The response to the Lynx has, unfortunately, been muted although it has excellent potential for business and education uses.

The basic machine will give the user up to 48K of memory but that can be expanded to 192K. The machine can also be expanded to support business programs which use the CP/M operating system with floppy disc drives.

The standard language supplied with the machine on ROM is Basic but additional packages can be obtained to run Pascal, Forth and Comal.

Computers Ltd  
33a Bridge Street  
Cambridge  
CB1 1UW

£225 inc. VAT  
Approximately 10,000  
Assembled  
Z-80A  
48K  
192K  
16K ROM  
40 x 24  
Standard  
Discs



HI! I'M BRAINY and I really rate computers. I'm in *Load Runner* every issue so write to me at 196-200 Balls Pond Road, London N1 4AQ and I'll do my best to answer any questions you have.

Remember, Brainy's the name and, by the way, I will pay £1 to anyone whose name is mentioned. Write away!

# BRAINY'S BRAINBOX

## Winning on the pools

MY PARENTS want to know if there is a program which they could obtain to help them win the pools. If there is, they say they will buy me a computer so that they can use it. Can you help?

*Martin Crump, Wetherby.*

THERE ARE a few programs of the type but they will not, of course, guarantee immediate or complete success, though they can help you. You could try Selec Software, 37, Councillor Lane, Cheadle, Cheshire. Tel: 061-428 7425.

The company has several programs, including a £15 one for the Apple, Spectrum (48K), Dragon, ZX-81 (16K) and a few others, called Poolswinner, which gives the probabilities of draws, score draws, homes or aways which you update as results are entered. You could always suggest to your parents that they look for advertisements in computer magazines to compare prices but not to set their hearts on success.

## Computer French is still basic

I HAVE a Sinclair Spectrum and am planning to go on holiday to France this winter but need to brush-up my French.

Can you suggest a good program to help me?

*Amy Richmond, Taunton.*

I AM AFRAID computers are not yet able to help you with your conversational French, which is what you need. That is because they cannot listen very well or speak very well, at least not well enough to help you. There are some "dedicated" computers which act as an automatic phrase-book, translating sentences you type-in, but I have not used one. There is also plenty of Spectrum software in French but most if not all is designed to help with things like vocabulary, tenses and such, not conversation.

## Telepathic game programs

I WATCHED a TV programme about ESP last week and computer games to help develop psychic skills were mentioned at the end. Could you tell me where I could obtain any of those games? I have never seen any in the shops.

*Karen Barnwell, York.*

I'M TOO BRAINY to have time to watch TV, even interesting programmes like the ESP one. I don't know who publishes ESP training programs for micros. Perhaps it is your chance to make a fortune? Programs for testing ESP skills would

not be difficult to write. Borrow a book on the subject and you will find some ideas. Here is one you can try:  
10 LET score = 0: LET go = 0  
20 LET go = go + 1  
30 PRINT "Enter 1 or 2, or 0 to stop."

40 INPUT guess

50 IF guess = "0" THEN PRINT "Score: "; score: "Goes: "; go: STOP

60 LET answer = INT (RND \* 10) + 1

70 IF answer = guess THEN PRINT "Yes": GO TO 20

80 PRINT "No": GO TO 20

## BBC B versus 48K Oric

I WAS THINKING of buying a BBC B computer but my friend told me that a 48K Oric is just as good but three times cheaper. Could you tell me the differences and what are the differences?

*Stephen Burdon, Berkshire.*

PROBABLY the most obvious difference is the keyboard. The BBC B is best because it is a 'proper' one, while that of the Oric is made up of thin, calculator-style keys. Also the BBC B is twice as fast as the Oric 1 and can fit many more characters on a screen if that is what you want.

The BBC B is fitted with a Centronics interface, a special port which connects the computer to certain printers. There are many BBC B games, most of which are top quality and arcade class. The Oric 1 has no such a good choice of games at present. The Oric 1 has a printer interface, a RS232. It is just as good as a Centronics only slightly slower. The BBC B is probably better for serious people but at more than £250 extra is it worth it?

## Screen test for monitors

COULD YOU tell me the difference between a monitor and a TV set?

*Simon Leeds, Cornwall.*

UNLIKE a TV set, a monitor cannot receive broadcast programmes but it gives you a much clearer picture. They cost about twice as much and for a little more you can obtain receiving monitors which can receive broadcasts as well.

EARLY TOMORROW MORNING, SOMEWHERE OUTSIDE A CITY WHERE COMPUTERISED INDUSTRY CREATES VAST QUANTITIES OF

# WASTE

SCRIPT  
BRIAN BURRELL  
ARTWORK  
JOHN COOPER  
LETTERS  
STEVE POTTER

NUMBER ONE FURNACE INOPERATIVE  
NUMBER FOUR DUMP FULL. PLEASE RETURN AT ONCE GROAT.

NOT NOW, BROD, I'M BUSY.

WASTE WHICH IS DISPOSED OF BY PRIVATE CONTRACTORS.

ACE DISPOSAL OPERATIVES

SILAS GROAT?

THAT'S ME. YOU MUST BE COLBY. YOU BROUGHT THE CASH?

NOT SO FAST, BIG MAN, LET'S SEE THE MERCHANDISE FIRST.

NO NEED FOR THE BLASTER. THAT'S ROCKFORD IN'S LATEST CIRCUIT FOR THEIR NEW INDUSTRIAL PROCESSOR.

WITH THIS BABY FITTED TO YOUR EQUIPMENT ANY MINERAL CAN BE IDENTIFIED IN 4-2 SECONDS.

NO KIDDING? JUST WHAT WE NEED TO CLINCH THAT BIG SAUDI DEAL.

THANKS, COLBY. AND BY THE WAY...

AMAZING WHAT YOU JUNK SCAVENGERS CAN PICK UP THESE DAYS. HERE'S YOUR DOUGH.



# TALES FROM THE MEMORY BANK



# TALES FROM THE MEMORY BANK



JOHN COOPER.





TERMINAL SOFTWARE

## Pinball Wizard

VIC-20

TERMINAL

## Bumper action for the BBC

PINBALL ARCADE, for the BBC B, is a complete simulation of an arcade pinball machine with an added bonus, if you don't like the table you can build your own!

The game comes with a ready-made table which includes all the features you would expect in a pinball machine—bumpers, wires, targets, and sets of numbers and letters which increase your score when lit. To play you press the space bar to pull back the spring and release it to fire the ball. 'z' and 'l' control the flippers, and 'p' gives you a new ball. Your score, the last, and highest scores are displayed, and every bump and thump of the ball is accompanied by a suitable sound effect.

When you get more adventurous, pressing Escape allows you to re-design the table, adding and removing parts, moving things around, changing the strength and scores of the bumpers, and the tilt of the table and speed of the flippers.

Available from Kansas City Systems, Pinball Arcade costs £10.35.

Fun, 7; additive, 7; graphics, 9.

## Vic-20 wizardry

ANOTHER VERSION of the classic arcade game has been produced for the unexpanded Vic-20. Pinball Wizard, from Terminal Software, displays an accurate graphic representation of a pinball table on the screen, with bumpers and three player-controllable flippers. Firing the ball is controlled by one key and the velocity by another. Pinball Wizard can be played by one or two players, with five balls per player, and there is a built-in TILT feature. One small criticism, however, is that there is no End of Game message.

A game which makes the most of the limited graphics available in 3.5K of memory, Pinball Wizard costs £7.95.

Fun, 7; additive, 7; graphics, 6.

## Gripping gorilla warfare

MARIO, the little Italian carpenter, is the hero who is trying to rescue his lovely girl friend from the clutches of the evil gorilla, Donkey Kong. The little flat-capped man runs along steel girders, jumps over barrels and fire-balls in his desperate bid to save his girl friend. Unfortunately, true love always loses because, just as Mario reaches her, the gorilla steals her away again and the action is repeated in a similar fashion on three other screens.

This highly-successful arcade game has been converted into cartridge form by Atari for the 400/800 home computer and still retains all the excitement of the arcade original at a cost of £29.99.

Fun, 9; additive, 9; graphics, 10.



## All roads lead to Rome?

NOW YOU HAVE the chance to take part in a motor rally with a difference in this educational game for the Oric. The author has written the program to test your knowledge of European geography while giving you a view of Europe from the point of view of a driver in the Monte Carlo Rally.

The computer will display the name of a European city and in the fastest possible time you must drive your car, using the cursor keys, to the spot marked on the map where you think the capital is situated. Your responses will be timed by a clock, so you must keep the time factor in mind.

Monte Carlo Rally is Oric-approved and can be obtained from Software Express. It costs £5.95.

Fun, 6; additive, 5; graphics, 7.



## Attractive adventure

Mystical Adventure  
THE GOLDEN BATON

GO IN SEARCH of the Golden Baton which was stolen long ago from the palace of King Ferrenuil. The baton is very important to the king and if you do not get it back his kingdom may be destroyed in this 48K adventure for the Spectrum.

The Golden Baton is different from most other adventure games as it uses high-resolution graphics and no text to describe the situations you may experience.

You will start in what appears to be a wood and go through many traps, including a hole into which you may fall and, if you are not careful, break your neck. Eventually you will reach a strange and evil land where magic is a reality.

The game is easy to play and you should be able to communicate most of your wishes to the computer without too much difficulty. Unlike some other adventure games, this program will accept a full English sentence and not just verb and noun combinations.

If you like adventure games you will enjoy playing this one. It is easy to use, difficult to solve and the graphics will prove an attraction even if you cannot get to the roots of the puzzles set by the author.

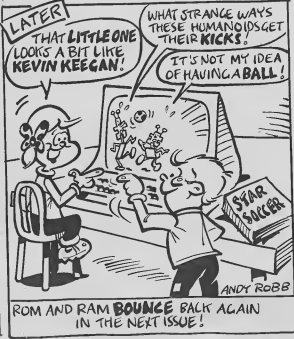
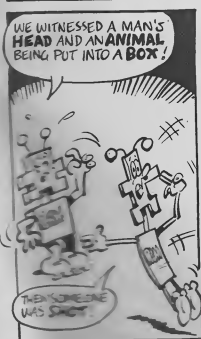
The Golden Baton is produced by Digital Fantasia and costs £10.20.

Fun, 7; additive, 8; graphics, 9.



# THE ADVENTURES OF ROM AND RAM







ONE OF the many games released in 1980 was *Missile Command*. The game was inspired by a nuclear war film, *On the Beach*. After watching the late-night movie, the programmer worked on some ideas and was rewarded eventually with the game we know today.

In this fast-moving game you are charged with the task of defending six cities from nuclear attack. To help you in your quest for survival, you have three missile-launching bases, Alpha on the left of the screen, Delta in the centre, and Omega on the right. Using the ultimate controller, a tracker ball, you move a small cross – cursor – about the screen, as the incoming missiles weave their way down the screen towards the cities.

By aiming a few centimetres below, you can destroy them by launching a missile from one of the three bases. The missile streaks upwards, detonating in mid-air, thus destroying the incoming missile. The first few waves are slow and easy to complete but as they progress we see aeroplanes and satellites traverse the screen, dropping bombs to add a little more speed to the game.

A useful hint is, at the beginning of every wave, to explode a line of about eight or nine bombs two-thirds of the way up the screen using the two end bases only, as the missiles are slower-moving than those of the centre base; that should take the initial sting out of the attack and the centre base missiles can then be used to pick off any stray incoming missiles and satellites.

Try not to use too many missiles in the first offensive, as each base contains only 10, and any missiles end undestroyed cities add extra points to your score at the end of each wave.

## Software

THERE IS *Missile Command* by Atari for the VCS and 400/800 computers.

For the BBC computer there is *Laser Command* by Programme Power of Leeds and for the Dragon 32 there is *City Defence* from Shard Software. The Spectrum has *Earth Defence* by Artic Computing.

Ratings out of 10

Atari 40/800	8
Atari VCS	7
BBC	7
Dragon 32	7
Spectrum	7



Providing processor power to The Controller in publishing Load Runner were Bill Scolding (editor), and June Mortimer (administration). Chris Winch, Harold Mayes MBE, Terry Cartwright and Richard Hease linked into the system. The corporate might of ECC Publications of 196-200 Balls Pond Road, London N1 4AQ was utilised continually. Printout by Cradley Print PLC, Warley, West Midlands. Distributed by Spotlight Magazine Distribution Limited, 01-607 6411. ISSN 0264-8369. © 1983 Load Runner.